ADDENDUM NO. 1

This Addendum is issued prior to Bid due date to revise the Bid/Contract Documents and as such is part of those documents; value of all items shall be included in Bid. After acceptance of Bid, claims for costs will not be considered by reason of failure by Bidder to have read Addenda.

Drawing and Detail Sheets issued with this Addendum:

Drawing # dated MDY
D# dated MDY

1.1 REFERENCE UPDATE

Reference: Section 08 36 14

a) Add item 1.1.8: Reference NFPA 80 – Standard for Fire Doors and other Opening Protectives

b) Revise item 1.1.7 to read: UL 752 – Standard for Bullet Resisting Equipment

c) Revise item 1.2.1 to read: Conform to UL 752, Level 2.

1.2 REFERENCE UPDATE

Reference: Section 08 39 53

a) Revise item 1.1.5 to read: UL 752 – Standard for Bullet Resisting Equipment

b) Revise item 1.2.1 to read: UL 752 – Standard for Bullet Resisting Equipment

c) Refer to item 1.2.2: replace “door and door frame” with “window and window frame”

1.3 SPELLING CORRECTION

Reference: Section 11 67 23.1

a) Refer to item 2.2.1.14: Replace “Shooing” with “Shooting”

1.4 ADDITIONAL WORDING

Reference: Section 11 67 23.1

a) Refer to item 2.2.3.2: Replace the wording “in the prone position” with “in the prone, kneeling, sitting and standing positions”

1.5 ADDITIONAL WORDING

Reference: Section 11 67 23.4

a) Refer to item 2.2.6.2: After the phrase “all lights in range” add the phrase “suspend scenario lights, initiate a warning buzzer in proximity to the shooter, and cause targets in use to turn on edge away from the shooters”

1.6 DRAWING REVISIONS

Reference: 2/M1.0

d) Modify New Drawing Note 1 to read:

"NEW SUPPLY AIR HANDLING UNIT (AHU-09). CONNECT ALL DUCTWORK, HYDRONIC, STEAM PIPING, CONDENSATE, AND CONTROLS RESPECTIVELY. EXTEND EXISTING SERVICES AS REQUIRED. PROVIDE REDUCER AND TRANSITION FITTINGS AS REQUIRED TO ADAPT NEW UNIT TO EXISTING SERVICES. RE-CONNECT, TEST AND BALANCE GLYCOL RUN AROUND SYSTEM. MODIFY AND RE-ROUTE EXISTING SERVICES IN THE AREA OF INSTALLATION TO ACCOMMODATE INSTALLATION."

e) Modify New Drawing Note 3 to read:

"NEW EXHAUST AIR HANDLING UNIT (AHU-13). CONNECT ALL DUCTWORK, HYDRONIC, CONDENSATE PIPING, AND CONTROLS RESPECTIVELY. EXTEND EXISTING SERVICES AS REQUIRED. PROVIDE REDUCER AND TRANSITION FITTINGS AS REQUIRED TO ADAPT NEW UNIT TO EXISTING SERVICES. RE-CONNECT, TEST AND BALANCE GLYCOL RUN AROUND SYSTEM. MODIFY AND RE-ROUTE EXISTING SERVICES IN THE AREA OF INSTALLATION TO ACCOMMODATE INSTALLATION."

1.7 SPECIFICATION REVISION

Reference: Specification 23 05 19 METERS AND GAUGES FOR HVAC

a) Add Paragraph 3.4 as follows:

"3.4 LOCATIONS:

1. Provide temperature gauges at the inlet and out let of each hydronic coil.
2. Provide differential pressure gauges at each filter bank
3. Provide pressure gauges at the inlet and outlet of each hydronic coil
4. Provide pressure gauges on the duct at the discharge of each AHU
5. Provide pressure gauges on the duct at the inlet of each AHU"

1.8 SPECIFICATION REVISION

Reference: Specification 23 05 93 TESTING, ADJUSTING AND BALANCING FOR HVAC

a) Add Paragraph 1.19.6 as follows:

".6 Work with Controls Contractor to establish supply air and exhaust air variable speed drive set points for various range air flow velocities"

1.9 SPECIFICATION CLARIFICATION

Reference: Specification 23 21 16 HYDRONIC SYSTEMS: STEEL

a) Modify Paragraph 2.2 to read:

".2 On glycol services up to 50mm, mechanical grooved fittings shall be acceptable."

1.10 DRAWING REVISION

Reference: Drawing E2.1

1. Text on drawing indicates Grommets by Arch, revise this to “supply and coordinate grommet placement with General Contractor”.

Part 1 General

1.1 REFERENCES

.1 ASTM A653 - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process

.2 ASTM A1011 - Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength

.3 ASTM E90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements

.4 CSA G40.20/G40.21 – General Requirements for Rolled or Welded Structural Quality Steel/Structural Quality Steel

.5 CSDMA Selection and Usage Guide for Steel Doors and Frames

.6 ICC/ANSI A117.1 - Standard for Accessible and Usable Buildings and Facilities

.7 UL 752 - Standard for Bullet Resisting Equipment

.8 NFPA 80 – Standard for Fire Doors and other Opening Protectives

1.2 PERFORMANCE REQUIREMENTS

.1 Ballistic Resistance: Conform to UL 752, Level 2.

.2 Acoustic Performance: Minimum Sound Transmission Class (STC) 52 tested to ASTM E90. Label indicating sound transmission class shall be applied to the door and door frame.

.3 Installed Door and Frame Assembly: Conform to ICC/ANSI A117.1

1.3 SUBMITTALS

.1 Section 01 33 00: Submission procedures.

.2 Product Data: Provide product data on door construction.

.3 Shop Drawings: Indicate door elevations, internal reinforcement, anchor types, closure methods, finishes, location for hardware, and cut-outs for glazing.

.4 Test Data:

.1 Submit independent test data from a recognized licensed laboratory indicating compliance with the bullet-resistance requirements.

.2 Submit test data indicating compliance with the Sound Transmission Class (STC) requirements. Include laboratory name, test report number, and date of test.

.3 Submit certification from test laboratory qualified under the National Voluntary Accreditation Program (NVLAP) of the U.S. Bureau of Standards.

1.4 QUALITY ASSURANCE

.1 Manufacturer: Minimum 5 years documented experience manufacturing blast resistant door and frame assemblies.

.2 Pre-installation Meeting: Convene a pre-installation meeting 2 weeks before start of installation of door, door hardware and operator assemblies. Require attendance of parties directly affecting work of this section, including contractor, architect, installer, and manufacturer's representative. Review installation and coordination with other work.

1.5 DELIVERY, STORAGE AND PROTECTION

.1 Section 01 61 00: Transport, handle, store, and protect products.

.2 Remove door panels, door hardware and operators from wrappings or coverings upon receipt on site and inspect for damage.

.3 Store in vertical position, spaced with blocking to permit air circulation between components.

.4 Store materials out of water and covered to protect from damage.

.5 Clean and touch up scratches or disfigurement caused by shipping or handling with zinc-rich primer.

Part 2 Products

2.1 MATERIALS

.1 Sheet Steel: Galvanized steel to ASTM A653

.1 Coating designation ZF001, for interior door assemblies

.2 Reinforcement: To CSA G40.20/G40.21, coating designation to ASTM A653, ZF75

.3 Structural Plate: Hot rolled steel to ASTM A1011.

2.2 HARDWARE

.1 Hinges provided by door manufacturer.

.2 For all other hardware items, refer to Section 08 71 00.

2.3 ACCESSORIES

.1 Glazing Stops: Formed galvanized steel channel, mitred corners; prepared for countersunk style tamperproof screws.

.2 Glass: Type as tested to achieve ballistic and acoustic ratings.

.3 Primer: Rust inhibitive zinc chromate.

2.4 FABRICATION

.1 Manufacture doors and frames to STC rating of 52, measured in accordance with ASTM E90.

.2 Manufacture doors and frames to Level 2 bullet resistance rating in accordance with UL 752.

.3 Bullet Resistant, Steel, Acoustic Doors, Swinging Door Type:

.1 Sheet steel faces, thickness, design, and core suitable to achieve specified bullet resistant, acoustic performance.

.2 Bullet resistant, acoustic construction, mechanically inter-locked shall be welded, filled and sanded with visible edge seams.

.3 Weld structural steel channels flush to top and bottom of door.

.4 Weld hardware reinforcement plates in place.

.5 Door core construction, longitudinal edges, mechanically inter-locked with visible edge seams.

.6 Reinforce doors where surface-mounted hardware is required.

.7 Drill and tap for mortised, templated hardware.

.8 Top and Bottom Channels: Inverted, recessed, welded steel channels.

.4 Install door silencers.

.5 Affix permanent metal nameplates to door and frame, indicating manufacturer's name, door tag, model number, and performance rating.

.6 Bullet Resistant, Acoustic Steel Frames:

.1 Sheet steel, metal thickness and appropriate to maintain door STC and fire ratings, mitred corners, fully welded seams.

.2 Factory assemble and weld frames.

.7 Factory install glazing: shall be in conformance with bullet resistant rating of door and frame assembly.

.8 Affix permanent metal nameplates to door and frame, indicating manufacturer's name, door tag, and STC rating where it shall be clearly visible.

2.5 FINISHES

.1 Finish Painting: refer to Section 09 90 00.

Part 3 Execution

3.1 INSTALLATION

.1 Install components to manufacturer's written instructions.

.2 Install steel doors and frames to CSDMA standards and local authority having jurisdiction.

.3 Utilize welders certified by Canadian Welding Bureau (CWB) for field welding.

.4 Coordinate with concrete masonry wall construction for anchor placement.

.5 Set frames plumb, square, level and at correct elevation.

.6 Allow for deflection to ensure that structural loads are not transmitted to frame.

.7 Adjust operable parts for correct clearances and function.

.8 Install and adjust perimeter and bottom acoustic seals.

.9 Finish paint in accordance with Section 09 90 00.

3.2 FIELD QUALITY CONTROL

.1 Provide qualified manufacturer's representative to instruct installers on the proper installation and adjustment of door assemblies.

.2 Provide manufacturer's representative to inspect door installation, and test minimum five (5) cycles of operation. Correct any deficient doors.

END OF SECTION

Part 1 General

1.1 REFERENCES

.1 ASTM A653 - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process

.2 ASTM A1011 - Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength

.3 ASTM E90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements

.4 HMMA 840 - Installation and Storage of Hollow Metal Doors and Frames

.5 UL 752 - Standard for Bullet Resisting Equipment

1.2 PERFORMANCE REQUIREMENTS

.1 Ballistic Resistance: Conform to UL 752, Level 2.

.2 Acoustic Performance: Minimum Sound Transmission Class (STC) 52 tested to ASTM E90. Label indicating sound transmission class shall be applied to window and window frame.

1.3 SUBMITTALS

.1 Section 01 33 00: Submission procedures.

.2 Product Data: Provide product data on bullet resistant, acoustic rated steel window frame construction.

.3 Shop Drawings: Indicate window frame elevations, internal reinforcement, anchor types.

.4 Samples: Submit manufacturer's frame finish samples, as well as manufacturer’s frame corner sample.

.5 Test Data:

.1 Submit independent test data from a recognized licensed laboratory indicating compliance with the bullet-resistance and acoustic requirements.

1.4 QUALITY ASSURANCE

.1 Perform Work to requirements of HMMA (Hollow Metal Manufacturers Association) standards.

.2 Manufacturer: Minimum 5 years documented experience manufacturing bullet and acoustic resistant steel window frame assemblies.

.3 Pre-installation Meeting: Convene a pre-installation meeting 2 weeks before start of installation of window frame assemblies. Require attendance of parties directly affecting work of this section, including contractor, architect, installer, and manufacturer's representative. Review installation and coordination with other work.

1.5 DELIVERY, STORAGE AND PROTECTION

.1 Section 01 61 00: Transport, handle, store, and protect products.

.2 Comply with HMMA 840.

.3 Remove window frames from wrappings or coverings upon receipt on site and inspect for damage.

.4 Store in vertical position, spaced with blocking to permit air circulation between components.

.5 Store materials out of water and covered to protect from damage.

.6 Clean and touch up scratches or disfigurement of frames caused by shipping or handling with zinc-rich primer.

Part 2 Products

2.1 MATERIALS

.1 Sheet Steel: Galvanized steel to ASTM A653

.1 Coating designation ZF001 for interior bullet resistant steel window frame assemblies.

.2 Reinforcement: To CSA G40.20/G40.21, coating designation to ASTM A653/A653M, ZF75.

.3 Structural Plate: Hot rolled steel to ASTM A1011.

2.2 ACCESSORIES

.1 Glazing Stops: Formed galvanized steel channel, mitred corners; prepared for countersunk style tamperproof screws.

.2 Glass: Type as tested to achieve ballistic and acoustic ratings. Glazing to be factory supplied loose ready for site installation by others.

.3 Primer: Rust inhibitive zinc chromate.

2.3 FABRICATION

.1 Manufacture windows to STC rating of 52, measured in accordance with ASTM E90.

.2 Manufacture windows to Level 2 bullet resistance rating in accordance with UL 752.

.2 Bullet Resistant, Acoustic Steel Window Frames: Fixed in-place, Inoperable

.1 Sheet steel and metal thickness appropriate to maintain frame bullet resistant and acoustic ratings.

.2 Frame members shall be fabricated with mitred corners.

.3 Factory assemble and weld frames.

.4 Affix permanent metal nameplates to window frame, indicating manufacturer's name, tag, model number, and performance rating.

2.4 SUPPLY OF GLAZING

.1 Glazing shall be designed in conformance with 1.2.

.2 Glazing shall be factory supplied and shipped loose ready for site installation by others.

Part 3 Execution

3.1 INSTALLATION

.1 Install components including bullet resistant, acoustic rated steel window frames and glazing in accordance with manufacturer’s written instructions.

.2 Install window frames to HMMA 840 standards.

.3 Coordinate with concrete masonry wall construction for anchor placement.

.4 Set frames plumb, square, level and at correct elevation.

.5 Allow for deflection to ensure that structural loads are not transmitted to frame.

.6 Finish paint in accordance with Section 09 90 00.

3.2 ERECTION TOLERANCES

.1 Section 01 73 00: Tolerances.

.2 Installation tolerances of installed frame for squareness, alignment, twist and plumbness are to be no more than ± 1/16in (1.5mm) in compliance with HMMA 841.

3.3 FIELD QUALITY CONTROL

.1 Provide qualified manufacturer's representative to instruct installers on the proper installation and adjustment of bullet resistant, window frame assemblies.

.2 Provide manufacturer's representative to inspect bullet resistant window frame installation. Correct any deficient assemblies.

END OF SECTION

Part 1 General

1.1 REFERENCES

.1 ASTM A653 - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process

.2 ASTM A1011 - Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength

.3 ASTM E90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements

.4 HMMA 840 - Installation and Storage of Hollow Metal Doors and Frames

.5 UL 752 - Standard for Bullet Resisting Equipment

1.2 PERFORMANCE REQUIREMENTS

.1 Ballistic Resistance: Conform to UL 752, Level 2.

.2 Acoustic Performance: Minimum Sound Transmission Class (STC) 52 tested to ASTM E90. Label indicating sound transmission class shall be applied to window and window frame.

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.1 Section 01 33 00: Submission procedures.

.2 Product Data: Provide product data on bullet resistant, acoustic rated steel window frame construction.

.3 Shop Drawings: Indicate window frame elevations, internal reinforcement, anchor types.

.4 Samples: Submit manufacturer's frame finish samples, as well as manufacturer’s frame corner sample.

.5 Test Data:

.1 Submit independent test data from a recognized licensed laboratory indicating compliance with the bullet-resistance and acoustic requirements.

1.4 QUALITY ASSURANCE

.1 Perform Work to requirements of HMMA (Hollow Metal Manufacturers Association) standards.

.2 Manufacturer: Minimum 5 years documented experience manufacturing bullet and acoustic resistant steel window frame assemblies.

.3 Pre-installation Meeting: Convene a pre-installation meeting 2 weeks before start of installation of window frame assemblies. Require attendance of parties directly affecting work of this section, including contractor, architect, installer, and manufacturer's representative. Review installation and coordination with other work.

1.5 DELIVERY, STORAGE AND PROTECTION

.1 Section 01 61 00: Transport, handle, store, and protect products.

.2 Comply with HMMA 840.

.3 Remove window frames from wrappings or coverings upon receipt on site and inspect for damage.

.4 Store in vertical position, spaced with blocking to permit air circulation between components.

.5 Store materials out of water and covered to protect from damage.

.6 Clean and touch up scratches or disfigurement of frames caused by shipping or handling with zinc-rich primer.

Part 2 Products

2.1 MATERIALS

.1 Sheet Steel: Galvanized steel to ASTM A653

.1 Coating designation ZF001 for interior bullet resistant steel window frame assemblies.

.2 Reinforcement: To CSA G40.20/G40.21, coating designation to ASTM A653/A653M, ZF75.

.3 Structural Plate: Hot rolled steel to ASTM A1011.

2.2 ACCESSORIES

.1 Glazing Stops: Formed galvanized steel channel, mitred corners; prepared for countersunk style tamperproof screws.

.2 Glass: Type as tested to achieve ballistic and acoustic ratings. Glazing to be factory supplied loose ready for site installation by others.

.3 Primer: Rust inhibitive zinc chromate.

2.3 FABRICATION

.1 Manufacture windows to STC rating of 52, measured in accordance with ASTM E90.

.2 Manufacture windows to Level 2 bullet resistance rating in accordance with UL 752.

.2 Bullet Resistant, Acoustic Steel Window Frames: Fixed in-place, Inoperable

.1 Sheet steel and metal thickness appropriate to maintain frame bullet resistant and acoustic ratings.

.2 Frame members shall be fabricated with mitred corners.

.3 Factory assemble and weld frames.

.4 Affix permanent metal nameplates to window frame, indicating manufacturer's name, tag, model number, and performance rating.

2.4 SUPPLY OF GLAZING

.1 Glazing shall be designed in conformance with 1.2.

.2 Glazing shall be factory supplied and shipped loose ready for site installation by others.

Part 3 Execution

3.1 INSTALLATION

.1 Install components including bullet resistant, acoustic rated steel window frames and glazing in accordance with manufacturer’s written instructions.

.2 Install window frames to HMMA 840 standards.

.3 Coordinate with concrete masonry wall construction for anchor placement.

.4 Set frames plumb, square, level and at correct elevation.

.5 Allow for deflection to ensure that structural loads are not transmitted to frame.

.6 Finish paint in accordance with Section 09 90 00.

3.2 ERECTION TOLERANCES

.1 Section 01 73 00: Tolerances.

.2 Installation tolerances of installed frame for squareness, alignment, twist and plumbness are to be no more than ± 1/16in (1.5mm) in compliance with HMMA 841.

3.3 FIELD QUALITY CONTROL

.1 Provide qualified manufacturer's representative to instruct installers on the proper installation and adjustment of bullet resistant, window frame assemblies.

.2 Provide manufacturer's representative to inspect bullet resistant window frame installation. Correct any deficient assemblies.

END OF SECTION

Part 1 General

1.1 PERFORMANCE REQUIREMENTS

.1 RCMP Indoor Firing Range Design Guidelines (current edition)

1.2 SUBMITTALS

.1 Product Data: Manufacturer's data sheets including preparation instructions and recommendations, storage and handling requirements and recommendations, and installation methods.

.2 Shop Drawings: Submit shop drawings prepared by the manufacturer showing plans, sections, elevations, layouts, profiles, and product component locations including anchorage, bracing, fasteners, accessories, and finishes.

.3 Manufacturer's Certificates: Certify products meet or exceed specified requirements.

.4 Closeout Submittals: Provide manufacturer's maintenance and operation instructions that include recommendations for periodic checking and adjustment of systems and maintenance of all components.

1.3 QUALITY ASSURANCE – MANUFACTURER/INSTALLER QUALIFICATIONS

.1 Manufacturer Qualifications: Manufacturer shall have a minimum of five (5) years manufacturing specified equipment and provide a list of minimum five (5) clients with similar equipment as specified below.

.2 Manufacturer must provide a toll free telephone number and access to a customer service representative. Services shall be promptly performed by a factory authorized and certified technician.

.3 Installation by manufacturer with installation supervisor having minimum five (5) years of experience installing specified equipment.

1.4 DELIVERY, STORAGE, AND HANDLING

.1 Store products in manufacturer's unopened packaging until ready for installation, protected from exposure to rain, snow, or other harmful weather conditions.

1.5 PROJECT CONDITIONS

.1 Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer. Do not install products under environmental conditions outside manufacturer's absolute limits.

Part 2 Products

2.1 ACCEPTABLE MANUFACTURERS

.1 Action Target

.2 Range Systems

.3 Savage Range Systems

.4 Meggitt Training Systems

.5 Patriot Range Technologies

.6 Super Trap

2.2 GRANULAR RUBBER BULLET TRAP

.1 Berm Trap

.1 Bullet Trap of shredded rubber medium, chipped or formed; able to decelerate, capture, and contain projectiles fired from police issued sidearms, pistol calibre carbines, and shotguns without generating bullet or fragment backsplash towards the Firing Line.

.2 Rubber medium treated with fire retardant and free of metal or fibre fragments.

.3 Berm framework made of steel, treated for corrosion resistance.

.4 No rear access for cleaning or service.

.5 Rigidly support the rubber medium, without sagging.

.6 Rubber medium shall exceed 914.4 mm (3 feet) in depth as measured from horizontal angle.

.7 Shall provide protection for end of the range and have a minimum height of 2438.4 mm (8 feet) and span entire width of end of range, unless otherwise noted on range specific drawings.

.8 Shall be inclusive of all hardware necessary for complete assembly.

.9 Shall be mounted on concrete pad or suitable footings.

.10 Shall accommodate surface variations of up to 50.8 mm (2 inches) on a concrete pad or footings.

.11 Shall aid in the elimination of airborne lead on the shooting range.

.12 No water-absorbing material added to rubber medium.

.13 Any hopper/feeder mechanism, needed to maintain consistent rubber thickness, must fit in space available without interfering with any mechanical or electrical systems in that same space.

.14 Shall allow the use of oblique angles for shooting, being able to safely accept +/- 1 lane of cross range fire from the 25 m (82 feet) firing point.

.2 Construction

.1 Berm framework shall snap together with interlocking parts, the top plate secured to the framework with a minimum grade 5 nuts and bolts.

.2 No on-site cutting or welding of materials to assemble the trap.

.3 Berm trap shall include minimum 0.057 cu.m. (2 cu.ft.) of rubber medium for each 0.093 sq.m. (1 sq.ft.) of trap plate.

.3 Operation

.1 The bullet trap shall be capable of full-time service, with downtime for major cleaning and reprofiling of rubber media only. For purposes of maintenance cost calculations, trap shall be considered in need of cleaning at 60,000 projectiles captured/contained per lane.

.2 The bullet trap shall be designed to accept fire from a fixed 25 m (82 feet) distant Firing Line, in the prone, kneeling, sitting, and standing positions, and it have a ballistic rating that at a minimum will capture/contain the following fired projectiles:

.1 9 mm Parabellum calibre 147 Grain FMJ and JHP fired from a police carbine or police duty pistol

.2 .40 S&W calibre 165 Grain FMJ fired from a police duty pistol

.3 12 Gauge slug or SSG fired from a police shotgun

.3 The bullet trap shall allow for the recovery of spent rounds for periodic recycling.

.4 The bullet trap shall require no covering over the rubber media to control slumpage.

.4 Options

.1 The top plate shall be 9.525 mm (3/8 inch) AR-500 steel.

.2 Berm trap cleaning.

Part 3 Execution

3.1 EXAMINATION

.1 Do not begin installation until installing surfaces have been properly prepared.

3.2 PREPARATION

.1 Clean surfaces thoroughly prior to installation.

.2 Prepare surfaces using methods recommended by manufacturer for achieving the best result for substrate under project conditions.

3.3 INSTALLATION

.1 Install in accordance with manufacturer’s instructions.

3.4 PROTECTION

.1 Protect installed products until completion of project

.2 Touch-up, repair, or replace damaged products before Substantial Completion.

END OF SECTION

Part 1 General

1.1 PERFORMANCE REQUIREMENTS

.1 RCMP Indoor Firing Range Design Guidelines (current edition)

1.2 SUBMITTALS

.1 Product Data: Manufacturer's data sheets including preparation instructions and recommendations, storage and handling requirements and recommendations, and installation methods.

.2 Shop Drawings: Submit shop drawings prepared by the manufacturer showing plans, sections, elevations, layouts, profiles, and product component locations including anchorage, bracing, fasteners, accessories, and finishes. Include all electrical data and connection details.

.3 Manufacturer's Certificates: Certify products meet or exceed specified requirements.

.4 Closeout Submittals: Provide manufacturer's maintenance and operation instructions that include recommendations for periodic checking and adjustment of systems and maintenance of all components.

1.3 QUALITY ASSURANCE – MANUFACTURER/INSTALLER QUALIFICATIONS

.1 Manufacturer Qualifications: Manufacturer shall have a minimum of five (5) years manufacturing specified equipment and provide a list of minimum five (5) clients with similar equipment as specified below.

.2 Manufacturer must provide a toll free telephone number and access to a customer service representative. Services shall be promptly performed by a factory authorized and certified technician.

.3 Installation by manufacturer with installation supervisor having minimum five (5) years of experience installing specified equipment.

1.4 DELIVERY, STORAGE, AND HANDLING

.1 Store products in manufacturer's unopened packaging until ready for installation, protected from exposure to rain, snow, or other harmful weather conditions.

1.5 PROJECT CONDITIONS

.1 Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer. Do not install products under environmental conditions outside manufacturer's absolute limits.

Part 2 Products

2.1 ACCEPTABLE MANUFACTURERS/PRODUCTS

.1 Mancom Freedom AWD Target System

.2 Meggitt XWT Wireless Target Carrier

2.2 WIRELESS TARGET SYSTEM

.1 Track Assembly

.1 11 gauge (minimum) steel, satin-coated finish.

.2 When installed, track sections must be rigid and support the carrier movements along its length without flexing.

.2 Target Retrieval Carrier

.1 Self-propelled by on-board battery

.2 Autosense of battery condition with automatic recharge when necessary

.3 Movement of carrier along its track to be controlled by industrial grade wireless technology and able to position the target carrier at no less than 6 different distances along the track within +/- 5.0 cm of desired distance placement.

.4 Body fabricated of 11 gauge (minimum) steel; faceplate, downrigger and clamp constructed of 6.35 mm (1/4 inch) AR500 hardened steel

.5 Target holding clamp operable by one hand.

.6 Drive wheels: high traction design

.7 Lighting: three (3) user-defined levels of white light and three (3) different strobe patterns of red, white, and blue LEDs; white and strobe patterns changeable from both the local and master control

.8 Target rotation precision controlled with close loop angular feedback

.9 Target carrier able to accommodate user programmable target

.10 Target carrier to be readily dismountable from overhead track for replacement or servicing without having to dismantle track assembly.

.3 Docking Station

.1 Houses battery management system and industrial grade wireless radio link

.2 Low profile, to maximize air flow and minimize air turbulence

.3 Automatically senses battery condition of carrier, having it return “home” to be charged when required

.4 Incorporates lighting effects similar to carrier but with added red light for low light training

.4 Local Control Screen (LCS)

.1 LCS to control target movements for its lane and to be incorporated into the lane’s shooting booth separation barrier.

.2 LCS to be backlit, to be touch sensitive, technology able to accept user inputs, data, and commands.

.3 LCS allows:

.1 Movement of target carrier to any selected position along track to be measured in whole or decimal metres or feet.

.2 Rotation of target to face, edge, or back

.3 Setting of target exposure, pause, and cycle times

.4 Downloading and running of scenarios from the MCS.

.5 User to program target carrier, left and right-hand facing edging functionality with duration exposures user selected.

.6 For backlighting, for use in all lighting environments, allowing for user selectable lighting and user defined lighting patterns and intensities.

.4 Houses intercom and paging required for each lane

.5 Master Control Screen (MCS)

.1 MCS to be positioned in the control room outside of the range with a fully functional slave unit located inside the range.

.2 User to program target carrier, left and right-hand facing edging functionality with duration exposures user selected.

.3 MCS to be backlit, to be touch sensitive, technology able to accept user inputs, data, and commands.

.4 Full descriptors on buttons

.5 Communicates with and controls range target equipment

.6 Powers up within 10 seconds and features a sleep function to power down after a user defined period of inactivity with “waking up” achieved by touching screen

.7 MCS be programmable with no less than 50 individual target control scenarios with no less than 30 programmable target movement/actions per scenario.

.6 Firing Line Photocell Security System

.1 To detect and react to user movements forward of the Firing Line, indicating unsafe shooter movements.

.2 Tied to lighting system, immediately turning up all lights in range, suspend scenario lights, initiate a warning buzzer in proximity to the shooter, and cause targets in use to turn on edge away from shooters when photocell beam is broken.

Part 3 Execution

3.1 EXAMINATION

.1 Do not begin installation until installing surfaces have been properly prepared.

3.2 PREPARATION

.1 Clean surfaces thoroughly prior to installation.

.2 Prepare surfaces using methods recommended by manufacturer for achieving the best result for substrate under project conditions.

3.3 INSTALLATION

.1 Install in accordance with manufacturer's instructions.

3.4 PROTECTION

.1 Protect installed products until completion of project

.2 Touch-up, repair, or replace damaged products before Substantial Completion.

END OF SECTION